II MEF FWD INFORMATION TECHNOLOGY OPERATIONS OIF 04-06

Colonel Pete Talleri

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" *The MAGTF is breaking new ground by being able to <u>track everything</u> right down <u>to the last tactical mile</u>.*

The process that the <u>Marine Corps</u> is going through is coming together, and they are <u>setting the stage for the rest of the services to follow suit</u>.

The lessons learned are <u>leading to greater capability in the joint fight</u>."

09/11/16

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Distribution Overview
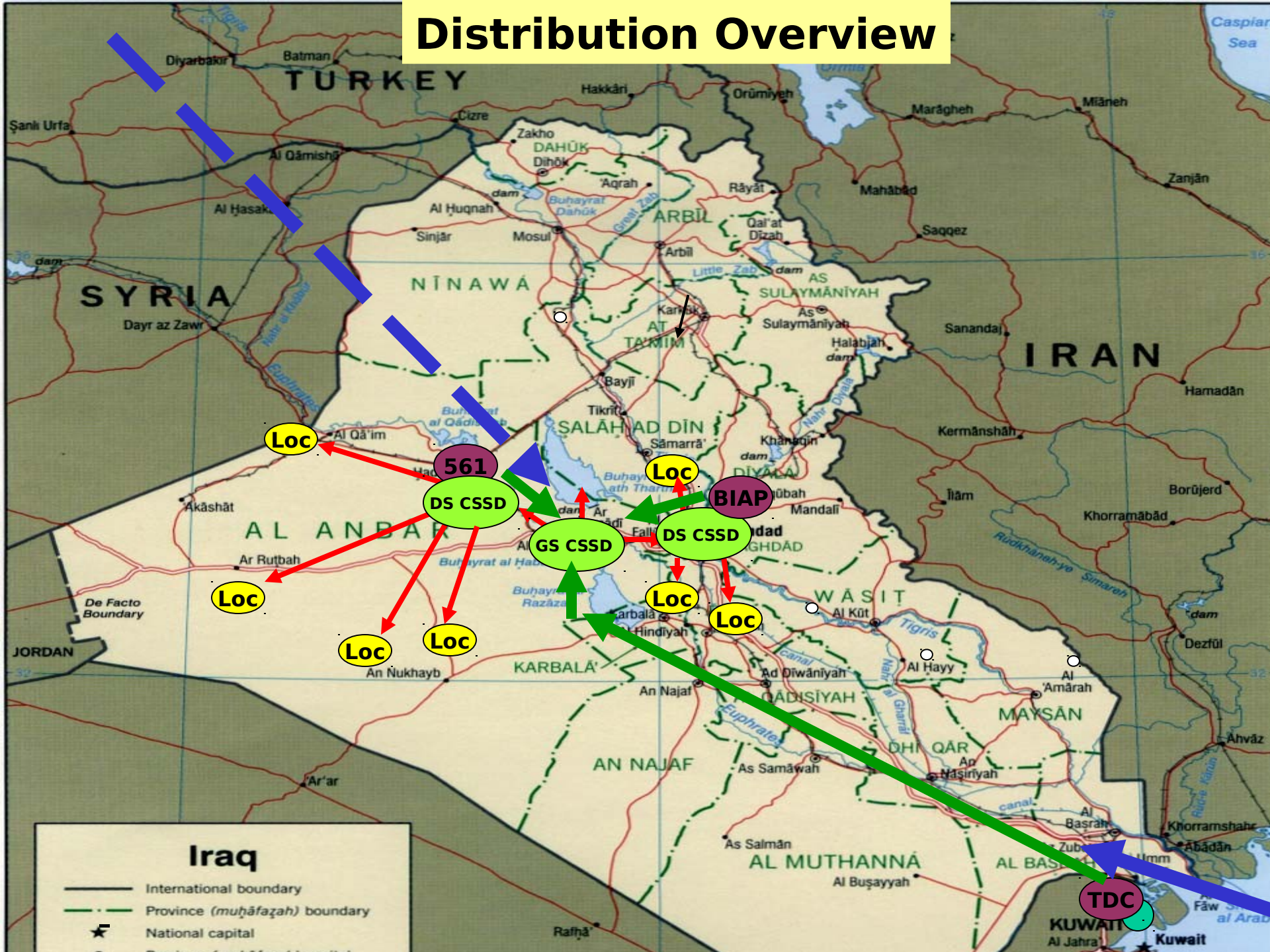
Equipment Distribution

	MARCENT HQ	Liaison Cells
VSAT	?	?
BCS3	?	?

	DS CSSD	ACE
VSAT	3	1
BCS3	3	15

	DS CSSD	DIV	MEF FWD
VSAT	1	1	0
BCS3	5	10	8

	GS CSSD	FSSG FWD
VSAT	2	1
BCS3	5	3

DS CSSD

GS CSSD

DS CSSD

Iraq

— International boundary
— · — Province (muḥāfaẓah) boundary
★ National capital

MAGTF Distribution Center
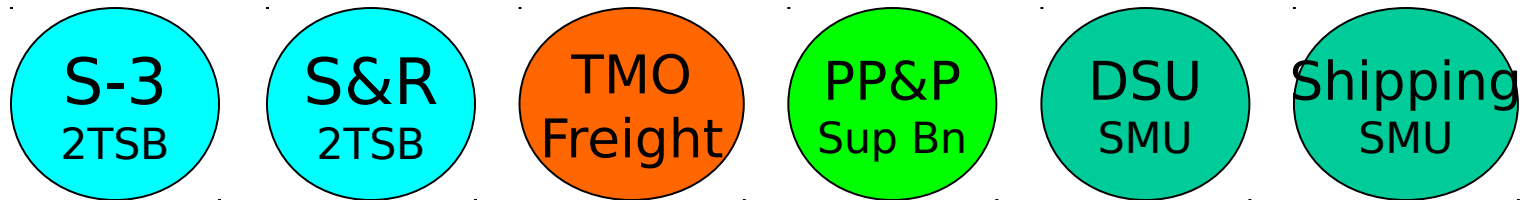
CWO2 Chris Douglas

MAGTF Distribution Center Mission
Provide a consolidated distribution focal point and facilitate in-transit visibility for II MEF in order to maintain throughput velocity and sustain operational tempo.

MAGTF DISTRIBUTION COMPANY
2ⁿᵈ Supply Battalion

S-3
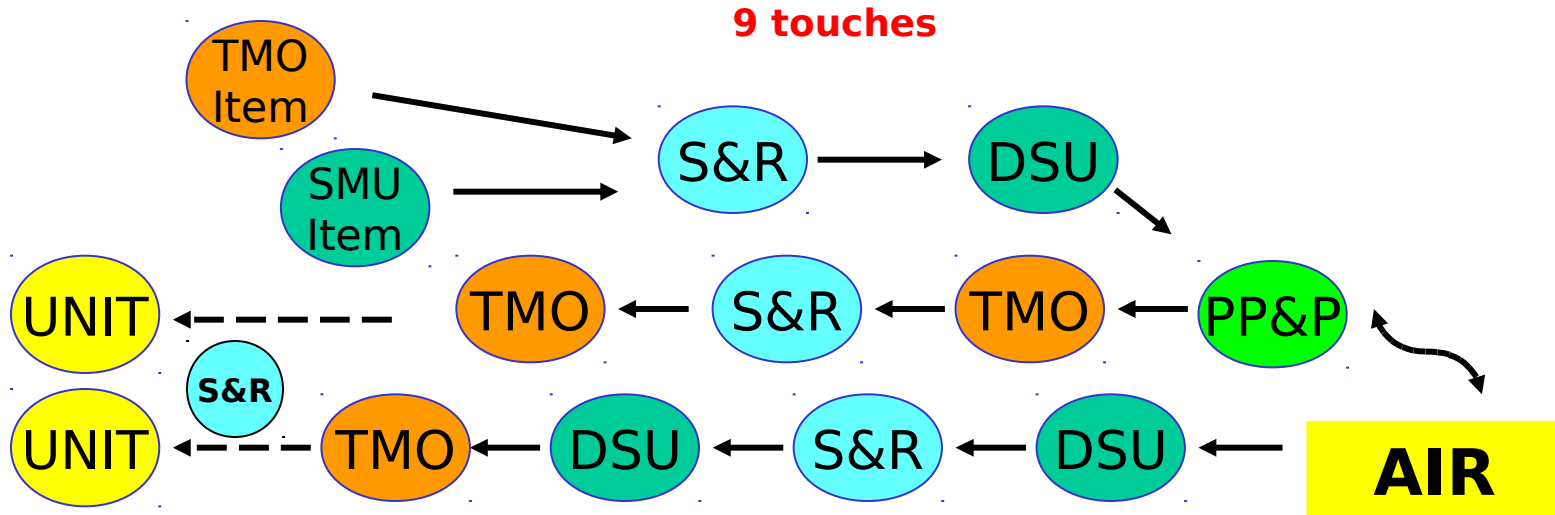2TSB

S&R
2TSB

TMO Freight

PP&P
Sup Bn

DSU
SMU

Shipping
SMU

Old Organization

Current Organization

Operations Center

S & R Platoon

P3 (ISO)

"Previous" DISTRIBUTION PROCESS MAP

9 touches

"Current" DISTRIBUTION PROCESS MAP

3 touches
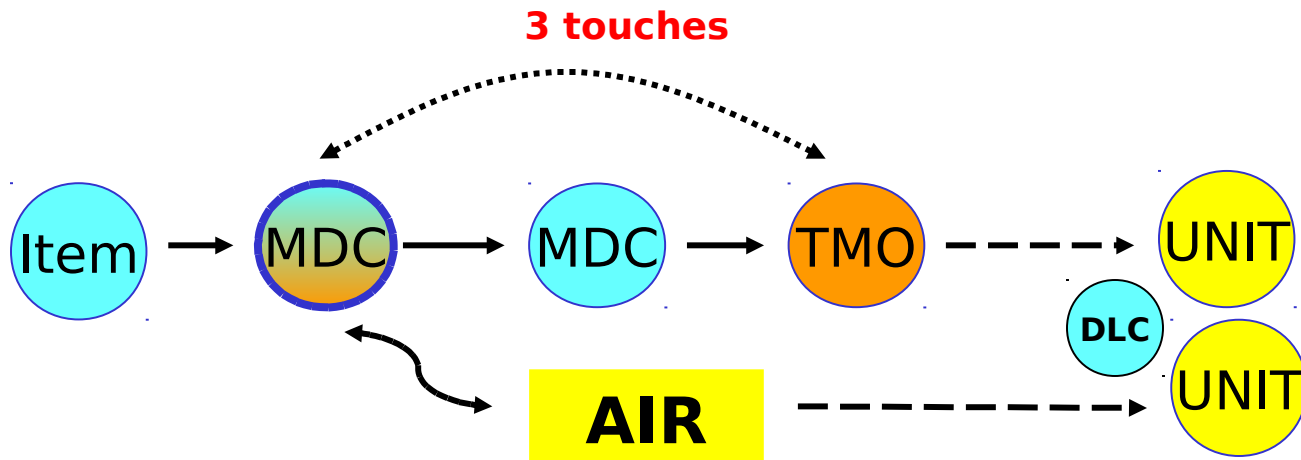
MDC Company Table of Organization
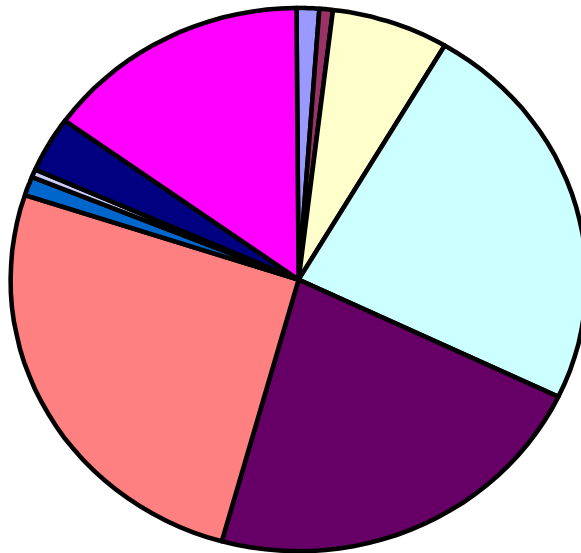
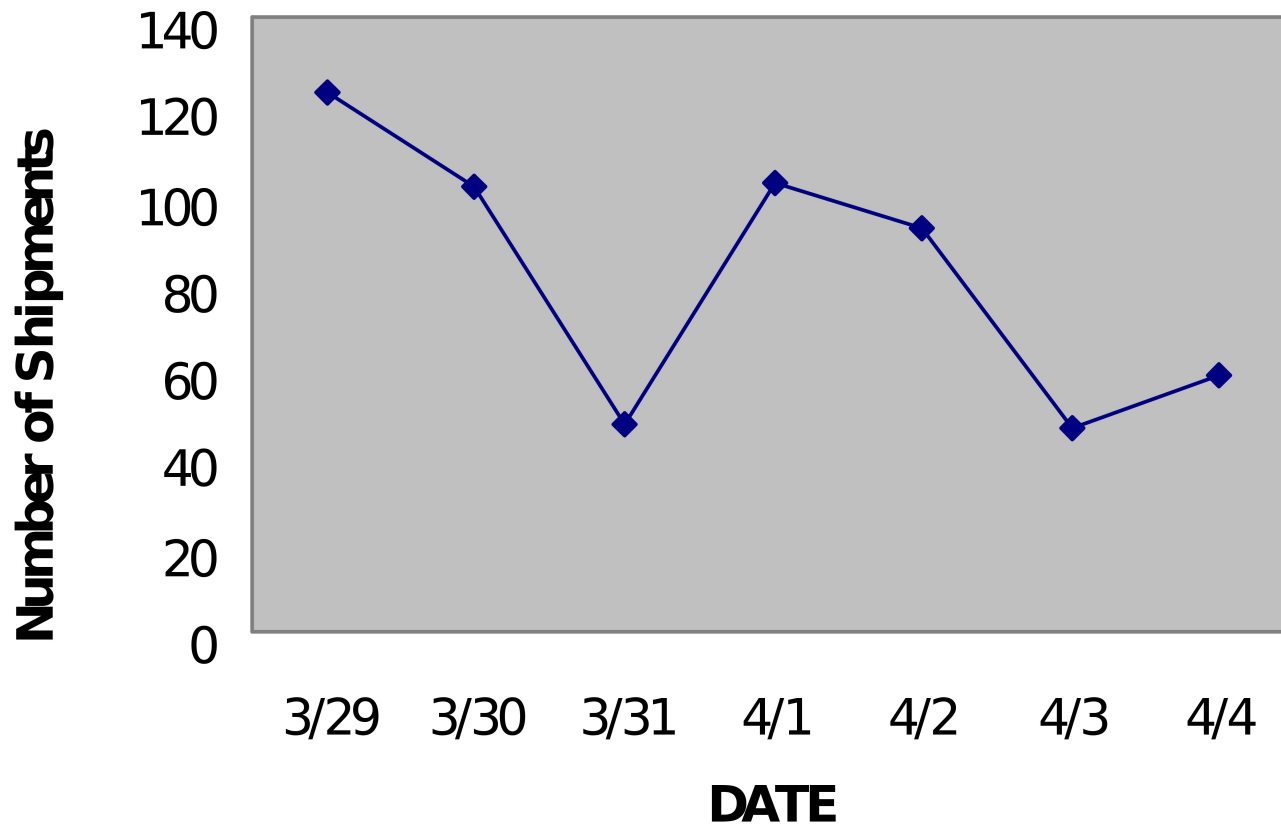| ■ 0402/30xx | ■ 0431 | ■ 3043 | ■ 3051 | ■ 3052 |
| ■ 31xx | ■ 35XX | ■ 9999 | ■ Civilian | ■ Unsourced |

Focus of Distribution

- Transparency
- Planning
  - Transportation
  - Supply
  - Distribution
  - Synchronization
- Visibility
  - Tags
  - Interrogators
  - Vehicle Tracking Systems
  - BCS3 - ITV Server & "Swivel Chair" Systems
- Influence
  - Routes
  - Pure Pallets
  - S&R
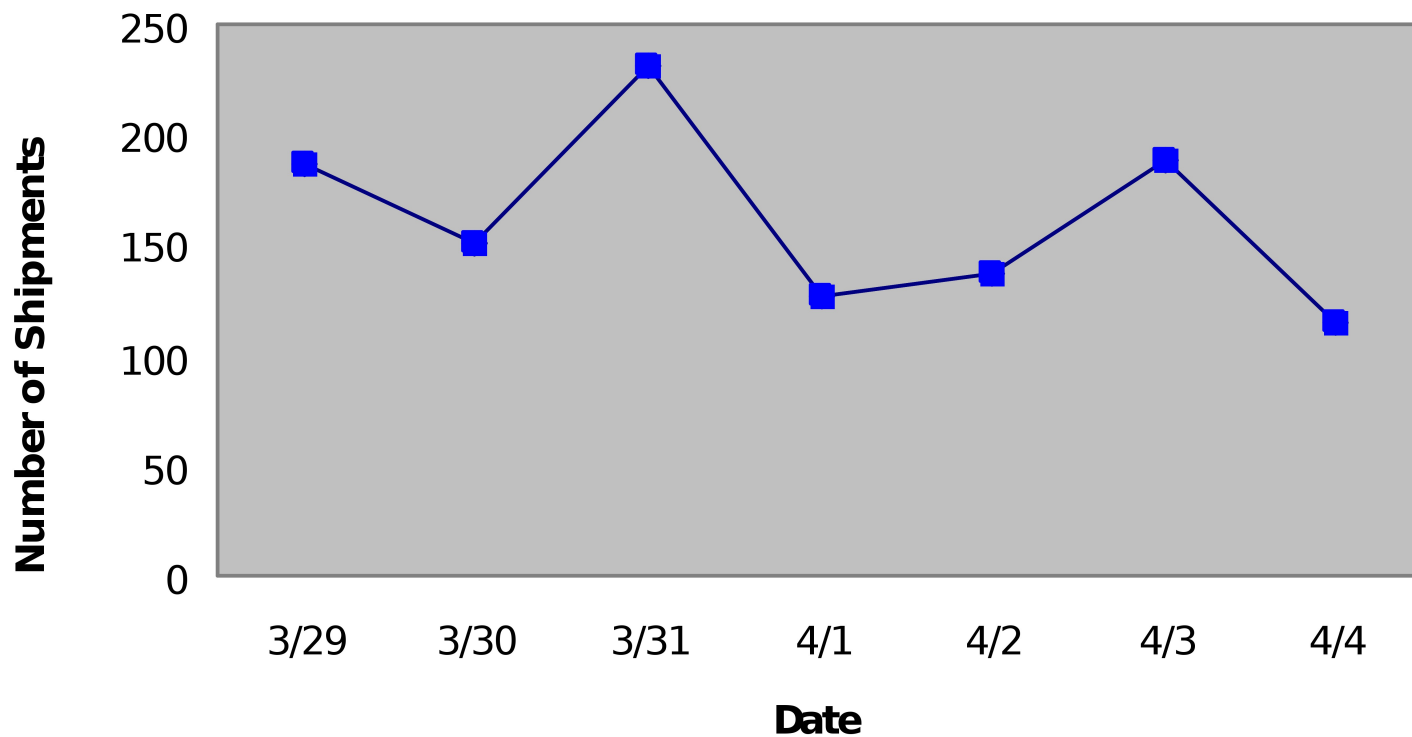 - Distribution Liaison Cells

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DAILY RECEIVED REPORT

DAILY OUTBOUND REPORT
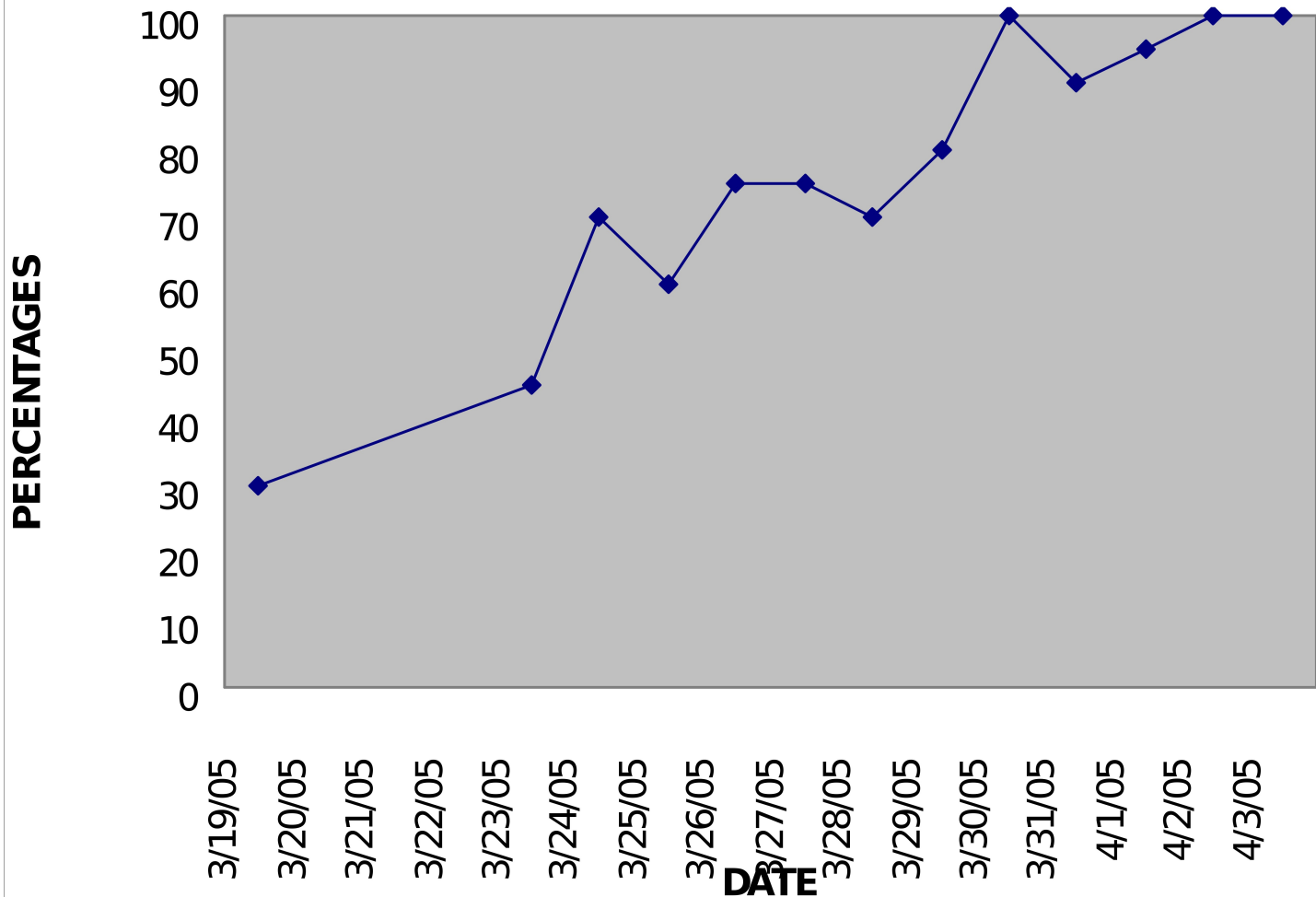
QC REPORT

Focus of Distribution

- Transparency
- Planning
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  - Supply
  - Distribution
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- Visibility
  - Tags
  - Interrogators
  - Vehicle Tracking Systems
  - BCS3 - ITV Server & "Swivel Chair" Systems
- Influence
  - Routes
  - Pure Pallets
  - S&R
  - Distribution Liaison Cells

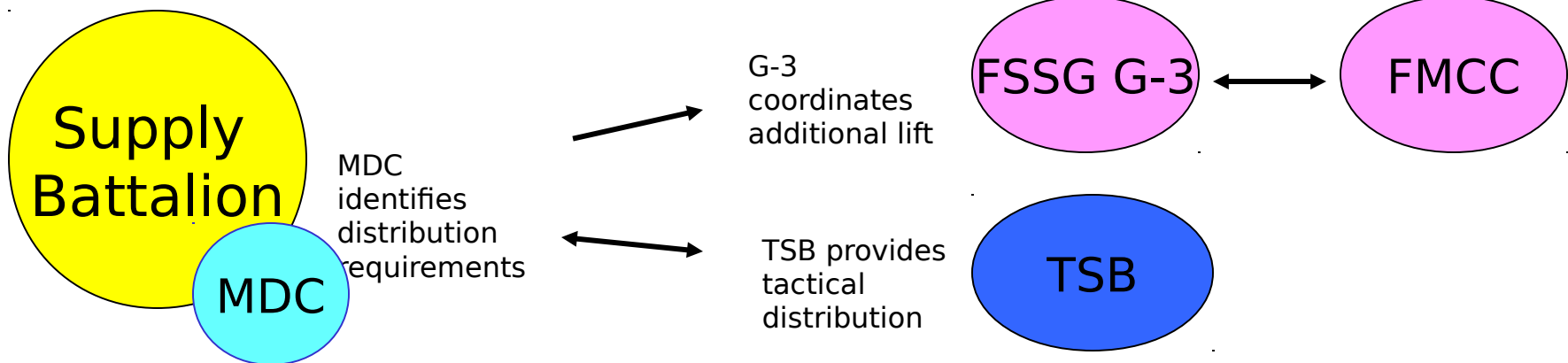09/11/16

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How to achieve distribution effectiveness?

- Unity of command and purpose
  - "Train as we Fight"
  - ISO "Face of the MDC"
  - MDOC "Voice of the MDC"
- MDC responsible for distribution vice supported unit
- Maximize IT enablers
- Parallel process vice sequential process
- Leverage Base TMO capabilities

MDC Relationships

- "Inventory is distribution moving at the speed of zero."
- S&R, Transportation, Warehousing, Link to Procurement and Source of Supply (SMU, DSSC, MEDLOG, AMMO, HAZMAT, Rations)
  - TMO
  - FSSG G-3 LMCC
  - Contracting
  - TSB
  - MEF G-4

Supply Battalion

MDC

MDC identifies distribution requirements

G-3 coordinates additional lift

FSSG G-3 ⟷ **FMCC**

TSB provides tactical distribution

TSB

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IT Enablers

Capt Greg Pace

LOG AIS HARDWARE CAPABILITIES

Drill Holes

**Battery Access Door**

Active RF 410 Tag - 128K 433.9 MHz Tag

- Stores 1150 lines of data
- Data sent to In-Transit Visibility (ITV) server
- 3-5 year battery life
- Cost $109 per tag
- Being replaced by SAVI 654 tag ($70 per tag)

Savi Tag 412 Mounting Bracket

Savi Tag 412

Drill holes

On/Off Indicators → OFF

ON

Release Point

Active RF 412 Tag

Battery operated
- 4KB read/write memory
- On/off capability

To turn the 412 tag on and off, rotate the tag so the words "on" or "off" show in the hole in the mounting bracket.

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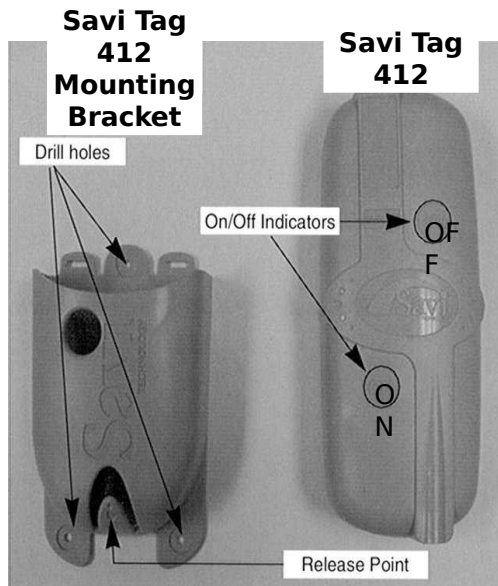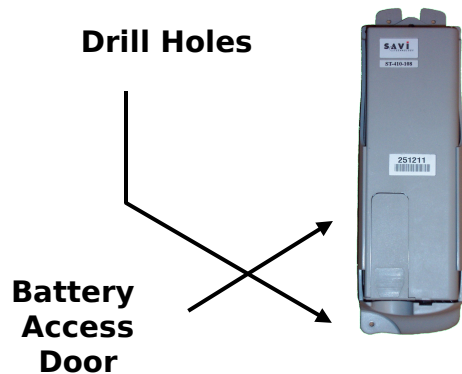
RFID Readers

Fixed Interrogator

➢ Gain nodal ITV

Early Entry Deployment Support Kit (EEDSK)

➢Port and Area Support RFID

Hand-held Interrogators

➢Yard management and item searches

Satellite Tracking Devices

Vistars

- Regional Coverage

- "Dumb Tracker"

- Used extensively throughout OIF

GPS Iridium Modem
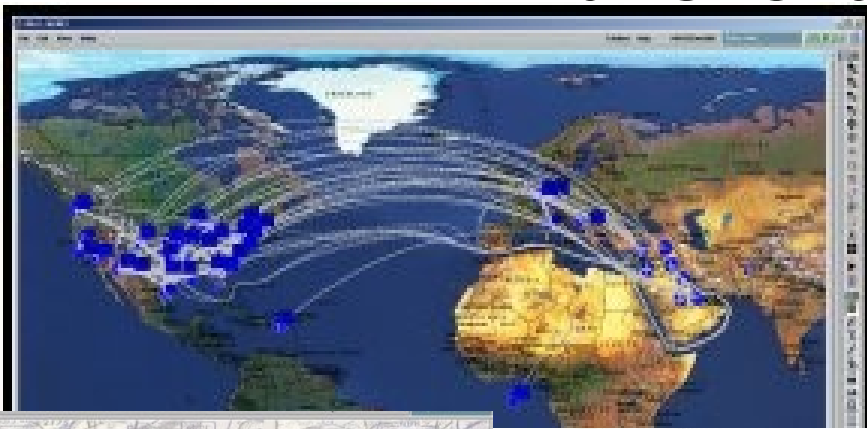
- Global Coverage

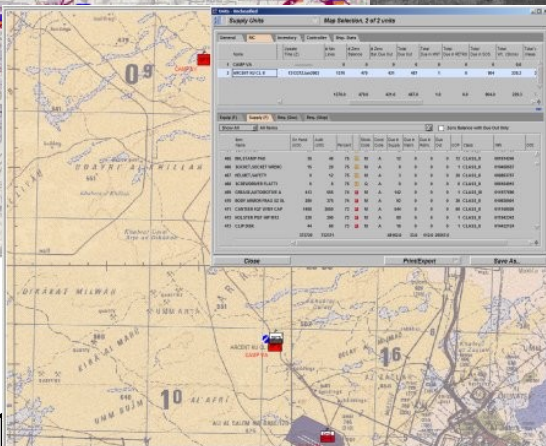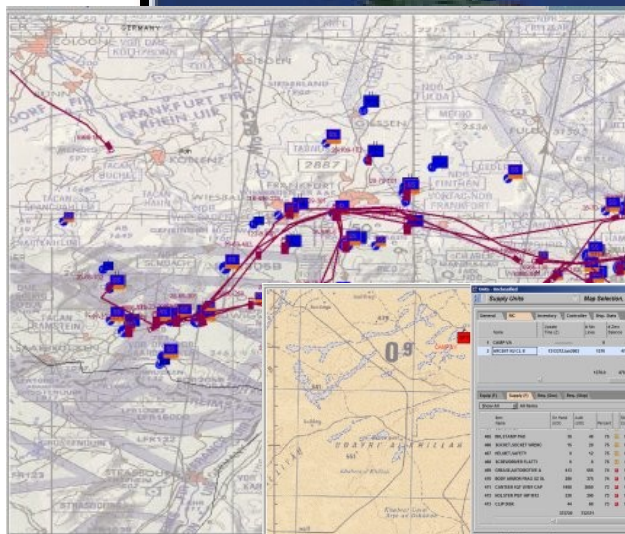- "Dumb Tracker"

- Marine Corps "unique"

Battle Command Sustainment Support System Functionality

- **Map Based Views**
- **TPFDD Analysis**
- **Deployment Rehearsals**
- **ITV Tracking**
- **Supply Point Visibility**
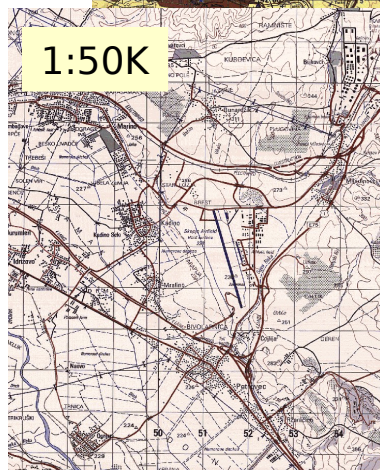- **Intelligent Agents**
- **March Credits**

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BCS3 – Mapping Capabilities

1:5M
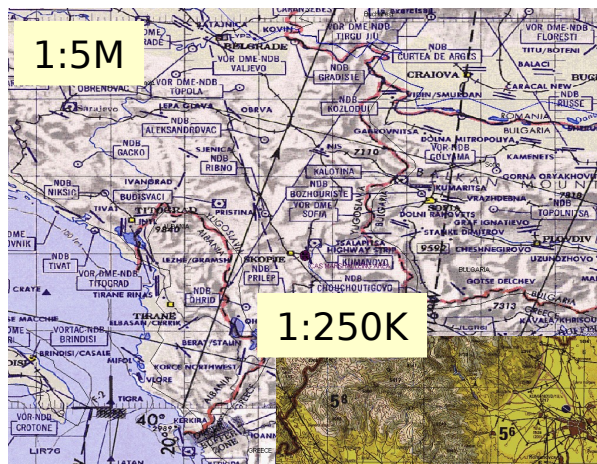
1:250K

1:50K

1:10 meter
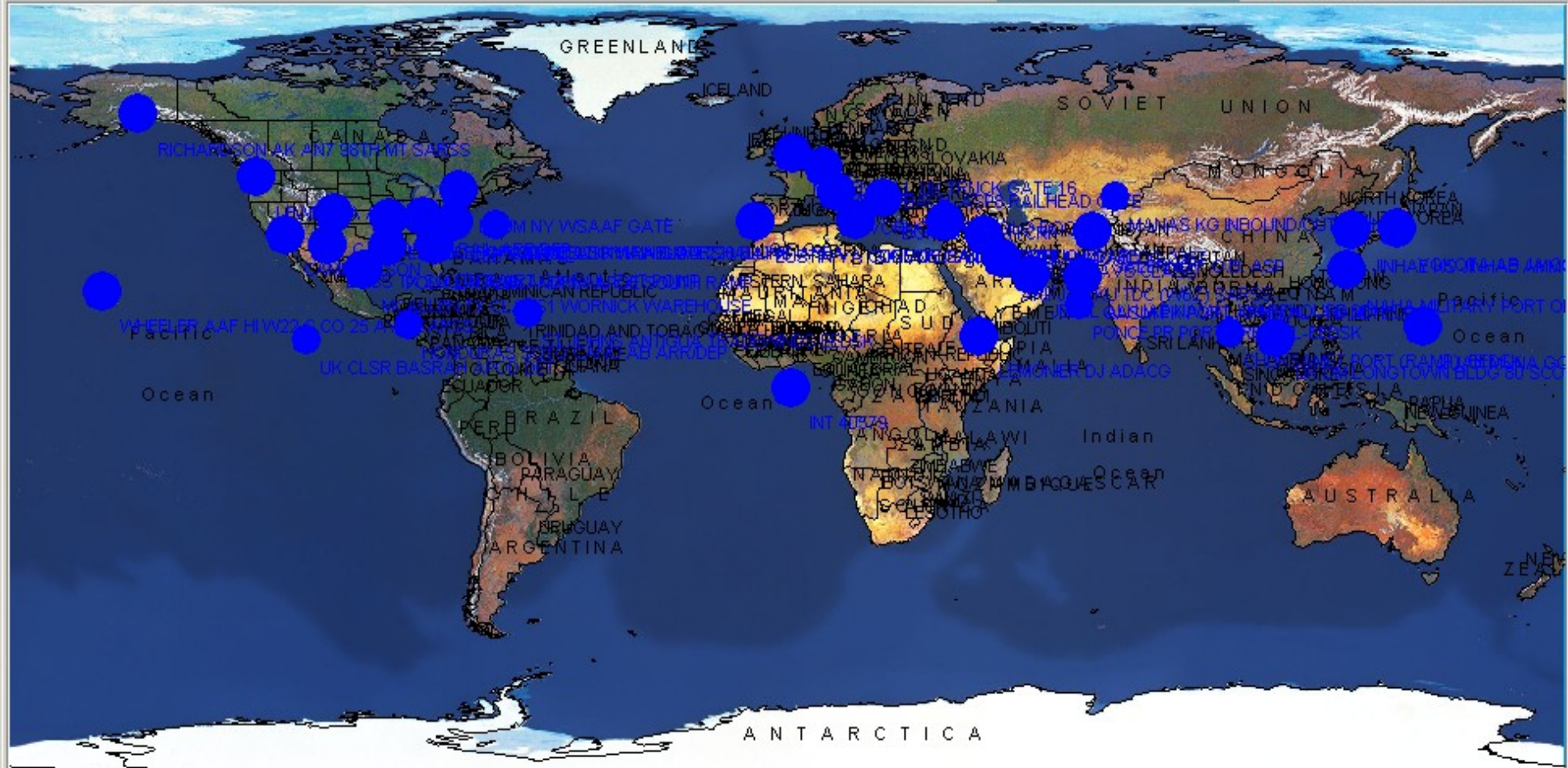
1:5 meter

National Imagery and Mapping Agency

- Compressed ARC Digitized Raster Graphics (CADRG)
  - 1:5M meter to 1:50K meter scale
- Controlled Imagery Based (CIB)
  - 1:10 Meter to 1:1M Satellite Imagery
- Digital Terrain Elevation Data (DTED)
- Digital Vector Map – World View

**Note
1:1M images are
Secret NOFORN**

Increased interoperability through Standard NIMA

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File   Edit   Utility   View   Toolbox   Help   211740ZApr2005   *Select: Start*   *Op-View: Al Taqqadum*

Op-View: Al Taqqadum

AL TAQADDUMR5 IZ GUARDIAN CITY SSA

AL TAQADDUMR4 IZ ADACG-APOD

AL TAQADDUMR6 IZ MDC YARD

38SLC42440809   TP 1:500K (1.19)
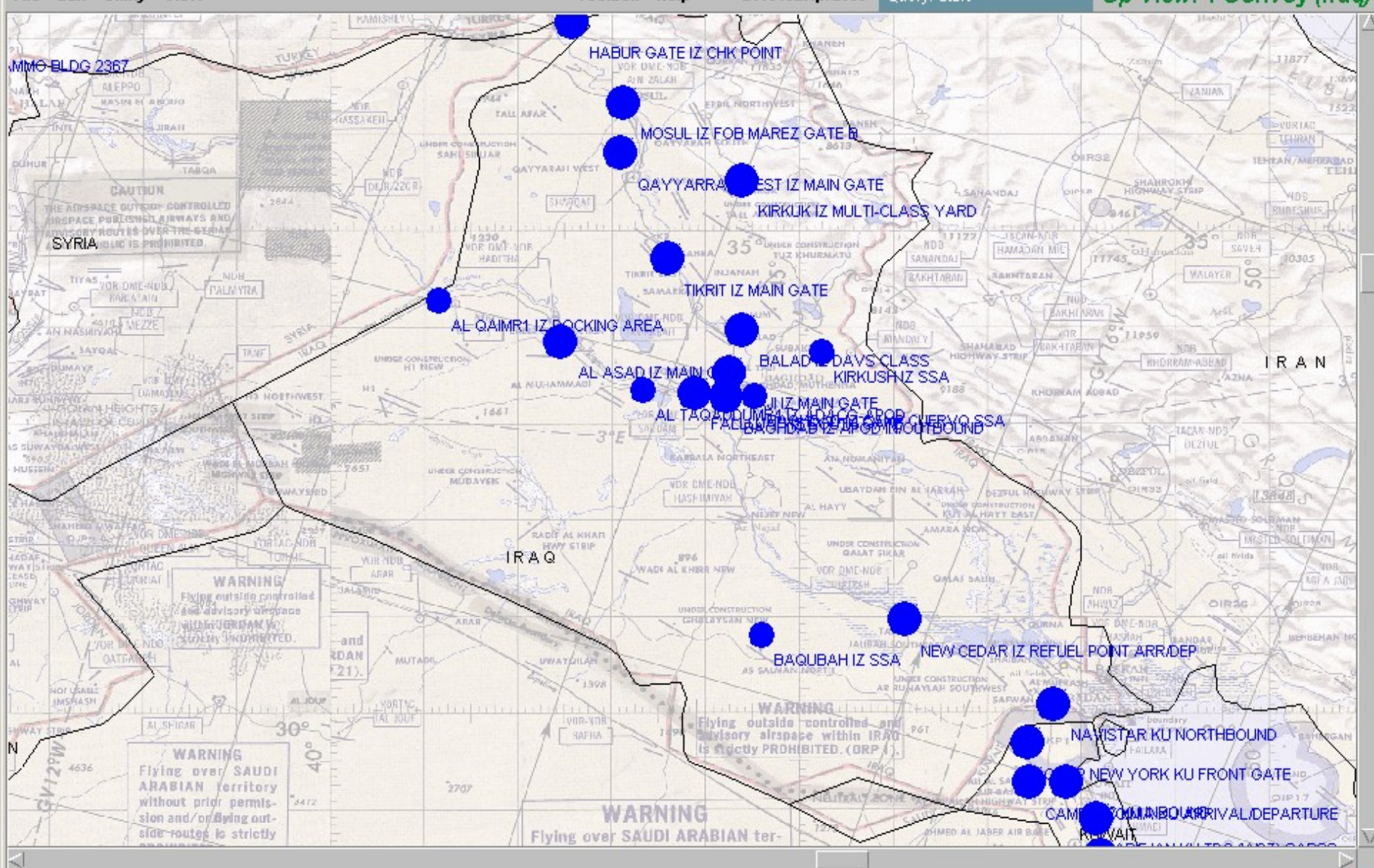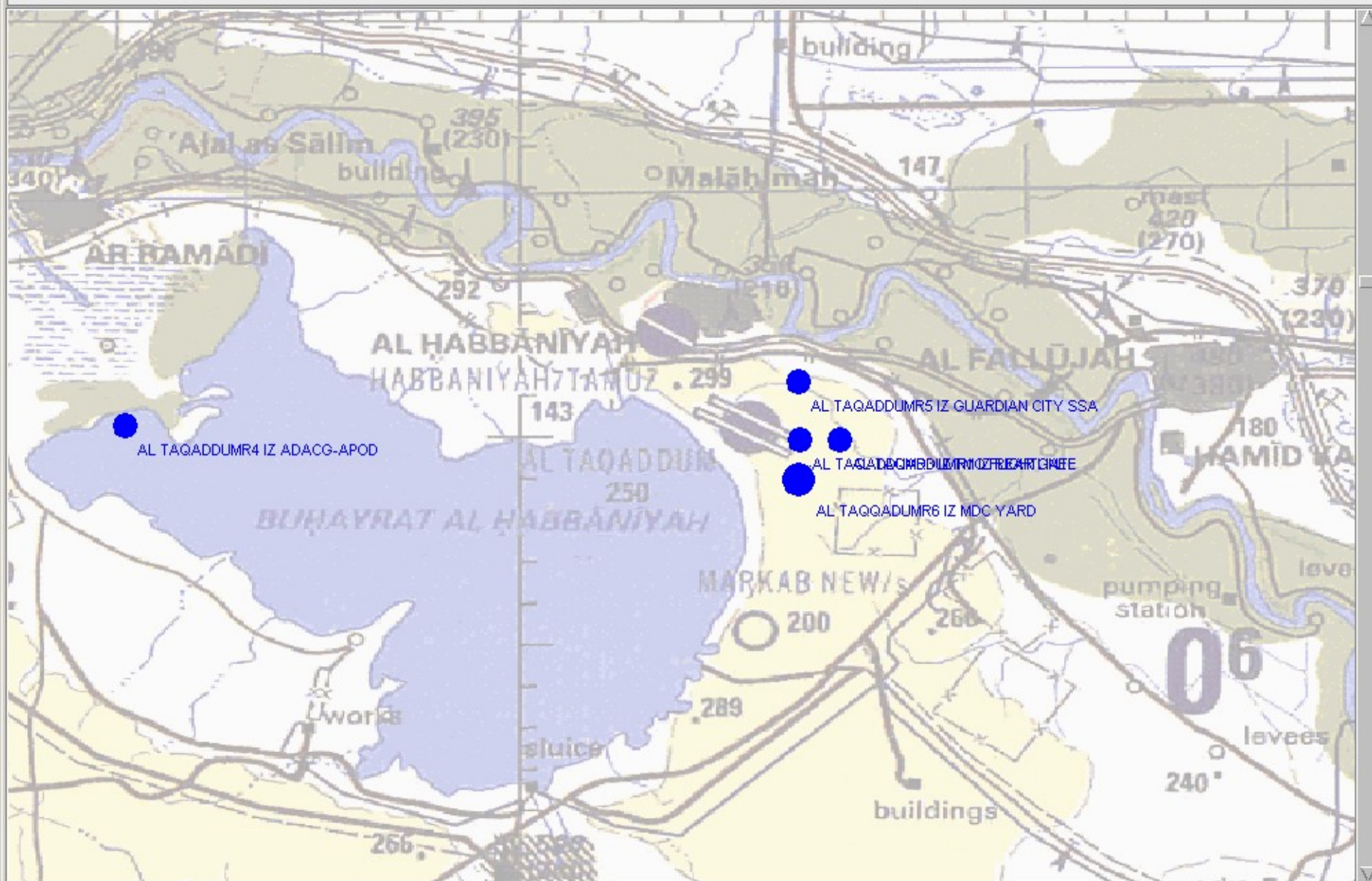
AL TAQQADUMR6 IZ MDC YARD

Selected 3 Interrogators.

38SLB71078558 | I1 10M (1.14) | ✉

From Map ▾   All Items   [A][✎][Q]

Filter

| Save As... |
| Save Selected... |

| View ▸ |

	Name	Enabled	Last Report Time (Z)	Location (Milgrid)	Comment	Defn Time (Z)
1	23331	Yes	211919ZApr2005	38SLB712872	AL TAQQADUMR6 IZ MDC YARD	281359ZMar2005
2	25496	Yes	211722ZApr2005	38SLB712872	AL TAQADDUMR2 IZ SMU LOT	171225ZDec2004
3	25473	Yes	222056ZMar2005	38SLB712872	AL TAQADDUMR6 IZ MDC YARD	201101ZMar2005

Detections

Show All ▾   All Items   [A][✎][Q]

View

| Export... |
| Print... |
| Properties... |

	Time (Z)	RF Tag	Type
1	211919ZApr2005	1001806	CONTAINER
2	152052ZApr2005	1002196	CONTAINER
3	060157ZApr2005	1002829	CONTAINER
4	061027ZApr2005	1002955	CONTAINER
5	141822ZApr2005	1003233	CONTAINER
6	061515ZApr2005	1004893	CONTAINER
7	171451ZApr2005	1005027	UNKNOWN
8	172321ZApr2005	1005608	CONTAINER
9	061644ZApr2005	1006458	CONTAINER
10	211500ZApr2005	1006711	CONTAINER
11	060938ZApr2005	1007272	CONTAINER
12	060549ZApr2005	1007712	CONTAINER
13	070645ZApr2005	1007713	UNKNOWN
14	170651ZApr2005	1007999	CONTAINER
15	161352ZApr2005	1008158	CONTAINER
16	070513ZApr2005	1008396	CONTAINER
17	170651ZApr2005	1008473	CONTAINER
18	160651ZApr2005	1008488	CONTAINER
19	170651ZApr2005	1008493	UNKNOWN
20	170651ZApr2005	1008494	UNKNOWN
21	211430ZApr2005	1009553	CONTAINER
22	060004ZA...2005	1010306	CONTAINER

RF Tags

Show All	All Items			
	Name	Lead TCN	Type	Is Active
1	1001806	M9432050660837XXX	CONTAINER	Yes

Filter

Save As...
Save Selected...

View ▷

TCNs | Locations

Show All	All Items									
	Name	Lead	Active	Item	# Tag:	RF Tag	Transponder	Reported Location	Report Time	Incremer
1	M9432050660837XXX	Yes	Yes		1	1001806		38SLB711871	211919ZApr2005	M943205

View

Export...
Print...
Properties...

Selected 3 Interrogators.

39STS95509234   GN 1:5M (0.48)

AL TAQADDUMR5 IZ GUARDIAN CITY SSA

AL TAQADDUMR8 IZAMQCDUMRUNREAR GATE

AL TAQQADUMR6 IZ MDC YARD

JHAYRAT AL HABBĀNĪYAH

38SLB65709545   TC 1:100K (0.62)
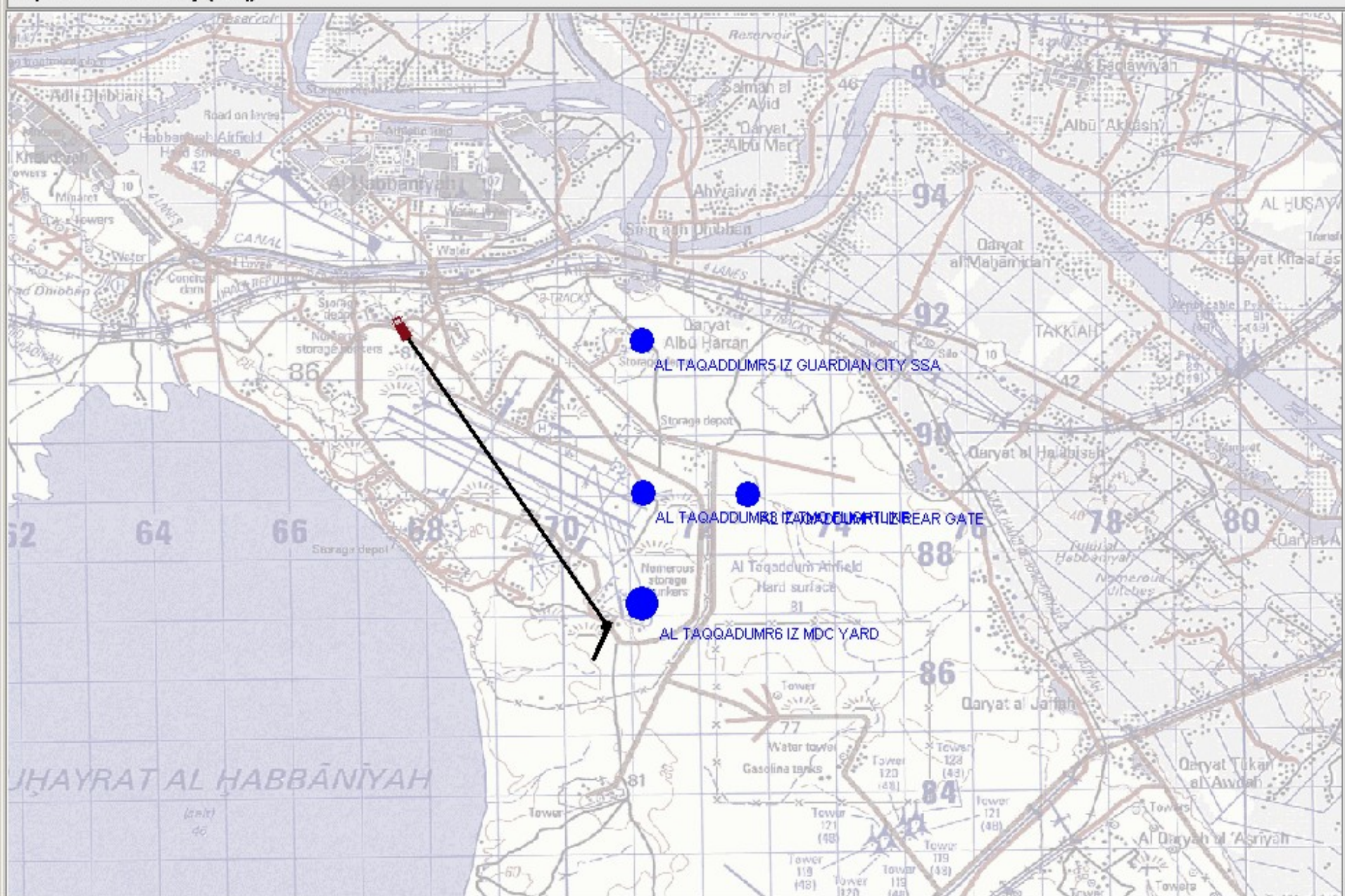
LTMITV-W2W

In-Transit Visibility to the Last Tactical Mile

Warehouse to Warfighter

LTMITV-W2W Defined

- Simplified approach to enhancing visibility of supplies forward
- *Warehouse to Warfighter*
  - 'Last-Mile' visibility of supplies
  - Capture of delivery/consignee transactions

What is Accomplished?

- Visibility from Warehouse to Warfighter

- Non-nodal location updates of materiel moving forward

  – Not dependent on nodal interrogators

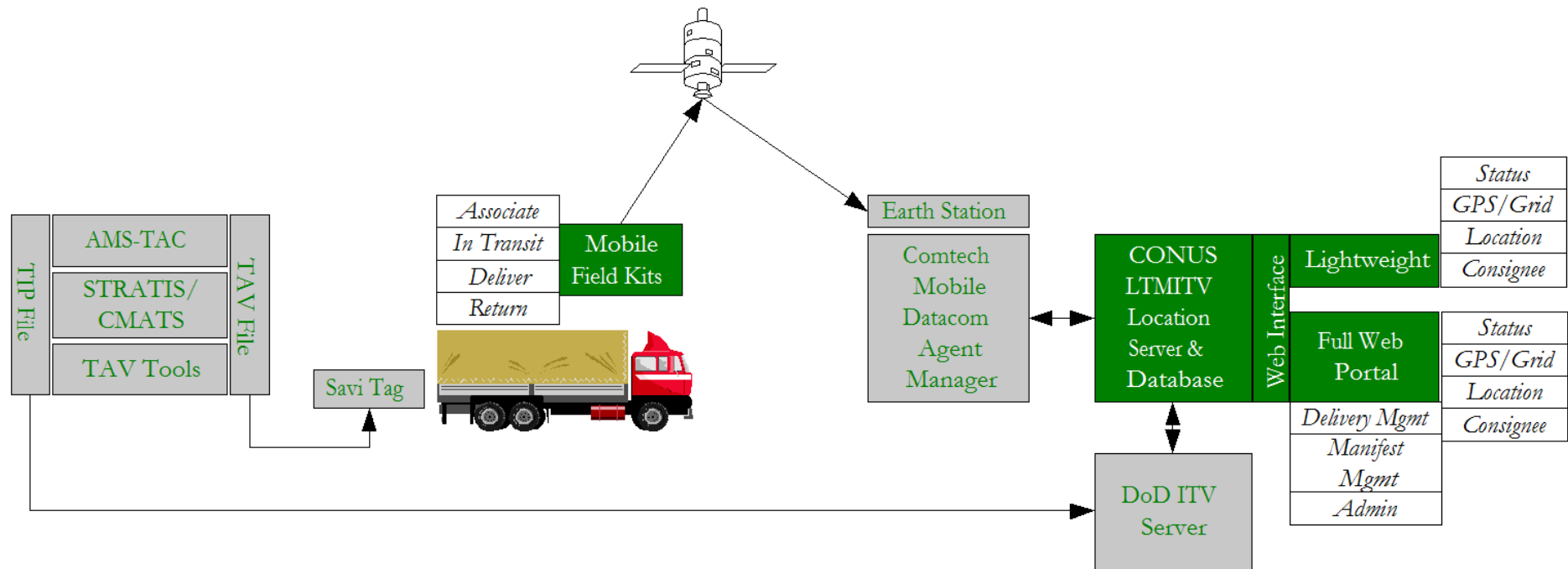- Electronic capture of consignee data at delivery point

Overview

Functional Overview

- **Location Server**
  - Receives and passes TIP files or content level detail from ITV
  - From Field Kits:
    - Receives location (GPS) updates
    - Receives camp drop, RUC pickup and RUC delivery data
  - Provides rich query and lightweight query alternatives via web interface
  - Sends AS1 and AS2 80 card column courier file updates to USMC server for consumption based on in-garrison and theatre business rules
- **Field Kits**
  - Tablet PC runs Visibility Tracking Program (VTP)
  - At delivery preparation – input of PDC, AAC and Tag ID
  - At Camp Drop, RUC Pickups and End RUC Deliveries
    - <u>Mobile Kit</u> – GPS updates and input of Tag ID and Consignee data
    - <u>Fixed Camp Kit</u> – input of Tag ID and Consignee data

Location Server

- CONUS based server
- Rich web interface requires secure sign-in
  – Allows manifest (TIP file) upload
  – Shows shipment status and location updates
  – Provides query capabilities
- Secondary 'lightweight' web interface allows simple queries for end users with limited bandwidth
  – No graphics
  – Simplified query options and query returns

Field Kit

- Tablet PC with power supply
  - Runs Visibility Tracking Program (VTP)
- Associated kit items
  - Barcode scan
  - GPS and data communications via satellite transceiver (USB connection to tablet)
  - Integrated cable for data communications and power
  - Power inverter for plug-in power for transceiver and tablet

VTP

- Visibility Tracking Program
- Software application that runs on Tablet PC, which is part of a Field Kit
  - A few touch screen, most pen-based
  - Pen-based provide brighter screens
  - Includes graphic keyboard pop-up to allow entry of name/textual data via keyboard
  - Pen-based also provides additional means of handwriting recognition for input

VTP Main Menu

Last Tactical Mile In Transit Visibility
Warehouse to Warfighter   Version 1.0.1858.24279

Status

FIELD KIT #: 99999   LOCAL TIME: 1603   ZULU TIME: 2103

GRID: [NO FIX]   LATITUDE: [NO FIX]   LONGITUDE: [NO FIX]

System Check < Tests for VTP Readiness

Start Route < START a New Delivery Session (Prepare for your Route)

RUC Delivery < DELIVER Gear to Consignee RUC

Camp Drop < DROP Gear at Intermediate Location (NOT to Consignee)

End Route < END the Current Delivery Session

Help < Documentation and Help for the VTP

Transceiver Load

VTP Key Features

- Correlates manifest data and Tag IDs with a field kit that is placed within a delivery/convoy vehicle
- Provides a means to query location and status of materiel pushed forward via a web interface
- Can be configured 2 ways:
  - Mobile unit on each supply convoy from warehouse
    - Direct RUC delivery
    - Intermediate camp drop
  - Fixed system at each camp
    - Capture subsequent RUC pickup from camp

VTP Key Features (con't.)

- Relies on satellite transceiver and GPS to communicate data to Location Server
  - Designed to use minimal bandwidth
  - Same transceivers as MTS and BFT
  - Provides robust seamless satellite data communications to ensure data that is sent up is not 'lost in the ether'
  - All communications between Field Kit and Satellite are encrypted
- Does not depend on a localized server
- Tablet PC does not use mapping software– it is purely an input/filter for data up to the Location Server

File   Edit   View   Favorites   Tools   Help

LAST TACTICAL MILE IN TRANSIT VISIBILITY
Warehouse to Warfighter

DoD ITV Server

Lightweight LTMITV

Log Out

Query   Manifest View   Delivery Mgmt   Admin

Search   DOC NUMBER: MMX20051690001   NSN: TCN:
Manifest Data   RUC: Tag ID: Last: 48 hours   SEARCH

RUC TAG	TCN	Items	Status	Last Position	Last Updated
✕ ✏ ⏏ MMX200 000000	MMC10041710005XXX	13	Closed	38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132	2/3/2005 6:06:08 PM

Document Number	NSN	Nomenclature	UI	QTY	RIC
MMX20051690001	**5999010321692**	**ACCESSORY MAINT KIT TELE**	**EA**	**00003**	**MC1**
MMX20051690002	6625010906789	ADAPTER,TEST,POWER SUPPLY	EA	00004	MC1
MMX20051690003	5895012509557	CONVERTER,MODEM,SI	EA	00005	MC1
MMX20051690004					
MMX20051690005					
MMX20051690006					
MMX20051690007					
MMX20051690008					
MMX20051690009					
MMX20051690010					
MMX20051690011					
MMX20051690012					
MMX20051690013					

✕ ✏ ⊖ MMX200 000001

✕ ✏ ⊖ MMX200 000002

✕ ✏ ⊖ MMX200 000003

✕ ✏ ⊖ MMX200 000004

TagHistory - Microsoft Internet Explorer provided by AT&T WorldNet Service

TAG: 000004

Log Date	Position	Status
2/3/2005 6:17:37 PM	38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132	Closed
2/3/2005 6:17:36 PM	38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132	Delivered
2/3/2005 6:12:26 PM	38° 54' 36" N 77° 13' 12" W 18SUJ 07513 09132	Camp DropOff
2/3/2005 6:09:56 PM		In Transit
		Waiting for Details
		Pending

start   1:54 PM Thursday

2d Supply Battalion

Lightweight Query

Closing Remarks

Colonel Pete Talleri
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AS IS...

**Satellite Tracker/
NIPR Feed to BCS3**

DOVER

AMS-TAC

ATLASS I/PCMIMMS

RFID R/W Capability

Expeditor

**M4 Sat Phone
w/Toughbook**

ACTIVE RFID TAG

**CAISI/VSAT
WIRELESS
NIPRNET
LAN**

BIG BOARD

BCS3

C2PC

MSCs

MEF

**CAISI/VSAT
WIRELESS NIPRNET
LAN**

**CAISI/VSAT WIRELESS
NIPRNET LAN**

FSSG (FWD) LCOP

DS CSSDs

GS CSSD

**CAISI/VSAT
WIRELESS
NIPRNET
LAN**

**CAISI/VSAT
WIRELESS
NIPRNET
LAN**

**M4 Sat
Phone
w/
Notebook
to get**

**Last Tactical
Mile**

RCT

GROUP

SQN
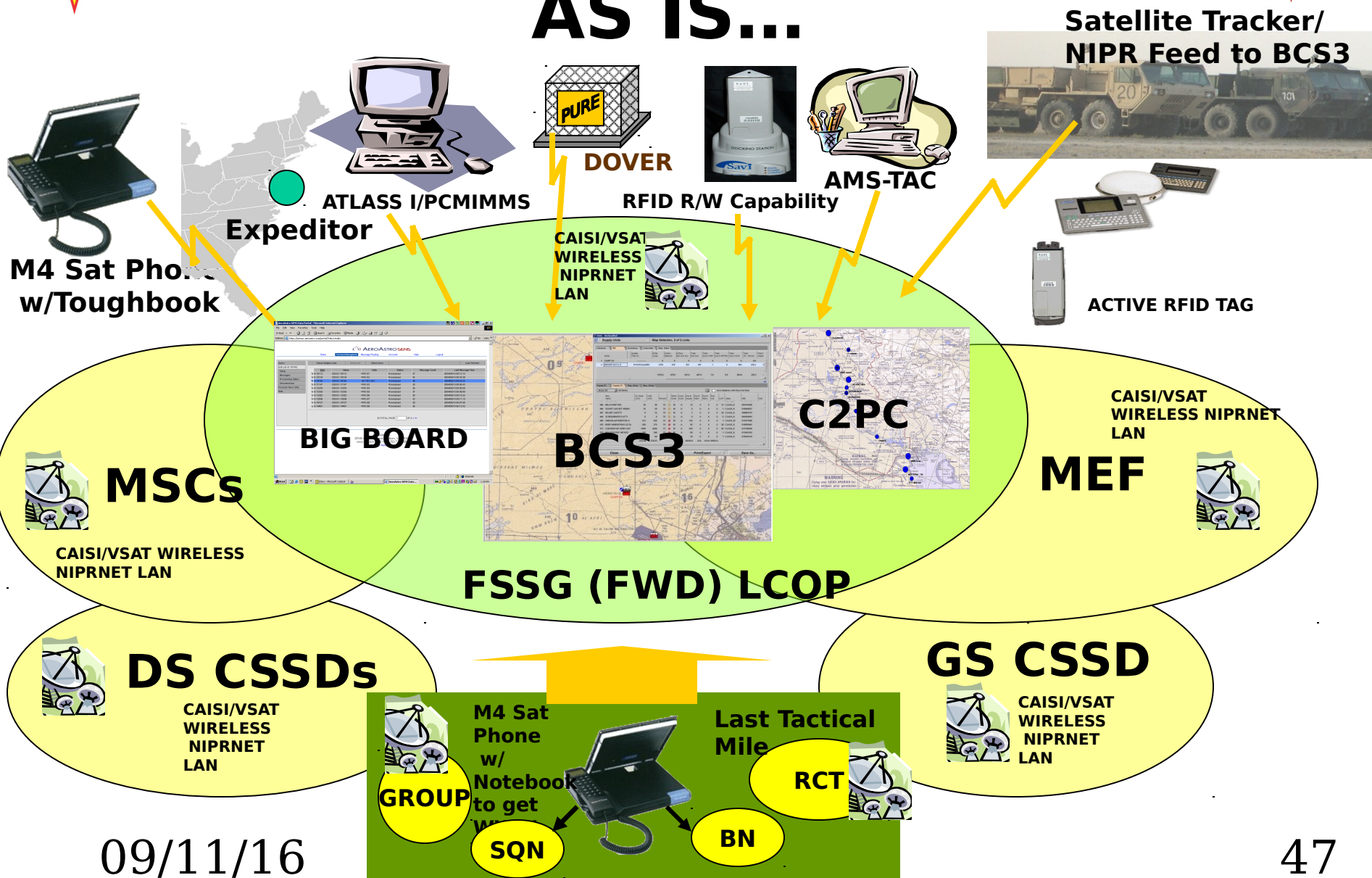
BN

Road Ahead…

- II MEF LMI's "fixed" lessons learned from:
  - Gulf War (no visibility / iron mountain)
  - OIF (limited Visibility from Strategic to Operational / no LOG C2)
  - OIF II (no visibility at the last tactical mile / no DPO)
  - OIF III (lesson-learned: too much visibility / "base-line" new metrics)

- MAGTF (FWD) ITV supports GCSS-MC / Sea Basing
  - ITV from Strategic to LTM (using correct OA)
  - Logistics Comm Pipes (broadband speed / encrypted)
  - MAGTF Distribution Center (DPO)
  - QUADRENNIAL DEFENSE REVIEW "A" List

- DUSD (AT&L) Briefing 18 May 05
  - MAGTF confidence (no reordering / efficient & effective distribution pipeline)
  - RFID "Passive" technology (cheaper)
  - USMC Leading the way!

The next generation active RFID tag is the ST-654. This tag has the same capabilities of the existing 410 RFID tag, but is only 6.25" x 2.125"x 1.125". This tag will be used in the same manner as the existing 410 tag described above. The NSN for this tag is 6350-01-523-1998. The battery used in this tag is not compatible with the 410 tags – it is product number BAT-1125, CLIN X009CB.

Features:
- 128Kbytes or 240Kbytes Memory
- Lithium Battery is easily replaced using a coin or screwdriver - no dismounting required
- 433 MHz, active RFID technology with up to 300-foot range for monitor, wake-up, and RF write/read.
- 123 kHz receiver for slot level, choke point tag wake-up and short range commissioning.
- Small-form-factor design, ideally suited for shipping containers, vehicles and other large assets. (6.25-in. x 2.12-in. x 1.125-in.)
- Built in buzzer for tag location.
- Rugged, weatherproof design.
- Fast 28 Kbps data rate powered by lithium battery.
- Built-in firmware database, designed for rapid searching by readers for specific items stored in the tag's memory.